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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ELHILO, EISA B

ART UNIT

PAPER NUMBER

1751

DATE MAILED: 02/21/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,016

Applicant(s)

PLOS, GREGORY

Examiner

Eisa B Elhilo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-87 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-87 are pending in this application.

#### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 42 and 45-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42 is indefinite because the claim recites the limitation "laccase". There is insufficient antecedent basis for this limitation in the claim and it is improper dependent claim.

Claim 45 is indefinite because the claim recites the limitations "NADPH peroxidases", "NADH" and "simplex peroxidases". It is unclear whether these terms are trade names or scientific names. The specification does not provide any guidance. Clarification is required.

Claims 46 and 47 are dependent on rejected claim therefore, they are rejected as well.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-34 and 52-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over

De La Mettrie et al. (US' 6,312,477).

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De La Mettrie (US'477) teaches a hair dyeing composition comprising oxidation bases such as 2,3-diamino-6-methoxypyridine (see col. 8, line 7), from 0.01 to 20% of 2-electron oxidoreductase enzymes such as glucose oxidases, pyruvate oxidases and pyranose oxidases that derived from uricases of animal, microbiological or biotechnological origin (see col. 3, lines 40-54), from 0.01 to 20% of donors (see col. 4, lines 13-17), from about 0.0005 to 12% of oxidation bases (see col. 10, line 25) such as para-aminophenylene, double bases and para-aminophenol compounds with the formulae similar to those claimed (see col. 5, formula II, col. 6, formula III and col. 7, formula IV), pyrazolopyrimidine derivatives (see col. 8, lines 41- 67 and formula V) which are similar to those claimed, from about 0.0001 to about 10% by weight of couplers (see col. 10, lines 56-59), direct dyes (see col. 11, line 1), emulsifying agents such as anionic, cationic and nonionic surfactants, conditioning agents, preserving agents and opacifiers (see col. 13, lines 20-34), heterocyclic oxidation bases such as pyrazolone, pyrimidine and pyridine derivatives (see col. 7, lines 64-67 and col. 8, lines 1-67), medium which is suitable for dyeing consists of water and organic solvents such as propylene glycol, ethanol alcohol and benzyl alcohol wherein the organic solvent presents in proportion between 1 and 40% by weight of the total weight of the dyeing composition (see col. 12, lines 36-53), inorganic or organic acids as acidifying agents such as sulfuric acid and citric acid (see col. 12, lines 63-67), basifying agents such as mono-, di-, and triethanolamines and a compound of the formula VI which is similar to that claimed (see col. 13, lines 1-19 and formula VI). The hair dyeing composition having a pH ranging from 5 to 11 (see col. 12, lines 54-60). De La Mettrie also teaches a method for dyeing hair that comprises the step of applying to the hair the dyeing composition as mentioned above using a multi-compartment dyeing devices or "kit" (see col. 11, lines 7-57).

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The instant claims differ from the reference by reciting other enzymes such as 2-electron oxidoreductase, 4-electron oxidoreductase and peroxidase as oxidizing agents. But the reference teaches that enzymes other than the 2-electron oxidoreductases can be used in the hair dyeing composition in accordance with the invention (see col. 13, lines 29-31).

4 Claims 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over De La Mettrie et al. (US' 6,312,477) in view of and Sorensen et al. (WO' 98/40471).

Sorensen (WO' 471) in another analogous art teaches a hair dyeing composition comprising 4-electron oxidoreductase enzymes such as laccases, which are obtainable from quite different sources such as plant origin, and laccases of microbial origin including bacteria and fungal laccases such as a *Rhizoctonia praticola* (see page 5, third and forth paragraphs). Sorensen teaches that the concentration of the laccase enzyme depends on its intended application which different from low concentration to high concentration with at least in concentration from 1 mg enzyme protein per ml product and up to concentration where the viscosity gets high (see page 6, second paragraph).

5 Claims 45-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over De La Mettrie et al. (US' 6,312,477) in view of Dias et al. (US' 6,309,426).

Dias (US' 426) teaches in other analogous art hair dyeing composition comprising peroxidase enzyme that using a wide range of substances as donors (see col. 26, lines 35-36). The peroxidase enzymes may be incorporated into the dyeing composition at levels of from 0.0001 to about 5% active enzyme by weight of the dyeing composition (see col. 26, lines 54-59).

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Therefore, in view of the teachings of the secondary references, one having ordinary skill in the art would have been motivated to modify the reference by using laccases and peroxidases enzymes to make such a composition. Such modification would be obvious because one would expect that the use of laccases and peroxidases as taught by Sorensen and Dias would be similarly useful and applicable to the analogous composition taught by De La Mettrie.

***Conclusion***

6 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eisa B Elhilo whose telephone number is (703) 305-0217. The examiner can normally be reached on M - F (7:30-5:00) with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (703) 308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*EEL*

Eisa  
February 14, 2002

*Margaret Einsmann*  
**MARGARET EINSMANN  
PRIMARY EXAMINER  
GROUP 1100**